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10/764,147	01/23/2004	Anurag Gupta	20040126-1	8140

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EXAMINER	
BLACKMAN, ROCHELLE ANN J	
ART UNIT	**PAPER NUMBER**
2851	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

HA

Office Action Summary	Application No.	Applicant(s)	
	10/764,147	GUPTA ET AL.	
	Examiner	Art Unit	
	Rochelle Blackman	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,12,15,16,23,25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,12,15,16,23,25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 5, 12, 16, 23, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakabayashi (U.S. Patent Application Publication No. 2002/0024734).

Regarding claim 1, Nakabayashi discloses a method (see function of elements in FIGS. 1-8) for enhancing contrast in a digital projector, comprising: positioning a first optical component (see 1, 3, 14, 24 of FIGS. 1A-B, 4, and 5) and a second optical (see 2, 7, 17, 25 of FIGS. 1A-B, 4, and 5) component along a light path (see 20, 30, 31, 38, 39 positioned along an optical or light path in FIGS. 1, 6-8 and see *diffraction optical element* in pg. 4, paragraphs [0048]-[0053]), said first optical component and said second optical component being separated by a gap (see gap between the "optical components" in FIGS. 1A-B and 5); sealing a perimeter of said gap with a sealant (see function of 11 and 28 of FIGS. 1B and 5 and see pg. 3, paragraph [0040] and pg. 4, paragraph [0048]), said sealant being positioned around said light path (see location of 11 and 28); and evacuating said gap to provide substantially a vacuum in said gap (see function of 19 in FIG. 5, pg. 3, and see paragraph [0039] and pg. 4, paragraph [0043]).

Regarding claim 5, Nakabayashi discloses wherein said sealant is positioned substantially along a perimeter of at least one of said first and second optical components (also see location of 11 and 28).

Regarding claim 12, Nakabayashi discloses a system (see FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (see 1, 3, 14, 24 of FIGS. 1A-B, 4, and 5) and a second optical component (see 2, 7, 17, 25 of FIGS. 1A-B, 4, and 5) positioned along a light path (see 20, 30, 31, 38, 39 positioned along an optical or light path in FIGS. 1, 6-8 and see *diffraction optical element* in pg. 4, paragraphs [0048]-[0053]) and being separated by a gap (see gap between the "optical components" in FIGS. 1A-B and 5); and a sealant (see 11 and 28) adapted to seal said gap substantially along a perimeter of said gap, said sealant being positioned around said light path (see location of 11 and 28); wherein said gap is evacuated to provide substantially a vacuum in said gap (gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system. Regardless of the fact, this limitation is still met by the function of 19 in FIG. 5, also see pg. 3, paragraph [0039] and pg. 4, paragraph [0043]).

Regarding claim 16, Nakabayashi discloses wherein said sealant is positioned along a perimeter of at least one of said first and second optical components (also see location of 11 and 28).

Regarding claim 23, Nakabayashi discloses a system (see FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (see 1, 3,

14, 24 of FIGS. 1A-B, 4, and 5) and a second optical component (see 2, 7, 17, 25 of FIGS. 1A-B, 4, and 5) positioned along a light path (see 20, 30, 31, 38, 39 positioned along an optical or light path in FIGS. 1, 6-8 and see *diffraction optical element* in pg. 4, paragraphs [0048]-[0053]) and being separated by a gap (see gap between the "optical components" in FIGS. 1A-B and 5); and means for sealing said gap substantially along a perimeter of said gap (see gap between the "optical components" in FIGS. 1A-B and 5), said means for sealing being positioned around said light path (see 11 and 28); wherein said gap is evacuated to provide substantially a vacuum in said gap (gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system. Regardless of the fact, this limitation is still met by the function of 19 in FIG. 5, also see pg. 3, paragraph [0039] and pg. 4, paragraph [0043]).

Regarding claim 25, Nakabayashi discloses a system (FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (see 1, 3, 14, 24 of FIGS. 1A-B, 4, and 5) and a second optical component (see 2, 7, 17, 25 of FIGS. 1A-B, 4, and 5) positioned along a light path (see 20, 30, 31, 38, 39 positioned along an optical or light path in FIGS. 1, 6-8 and see *diffraction optical element* in pg. 4, paragraphs [0048]-[0053]) and being separated by a gap (see gap between the "optical components" in FIGS. 1A-B and 5); and means for restricting airflow through said gap (see 11 and 28), said gap having a substantial vacuum therein (gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system. Regardless of the

fact, this limitation is still met by the function of 19 in FIG. 5, also see pg. 3, paragraph [0039] and pg. 4, paragraph [0043]).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 12, 16, 23, 25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by McGettigan et al. (U.S. Patent No. 6,795,243).

Regarding claim 12, McGettigan discloses a system (see FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (12) and a second optical component (22) positioned along a light path (41) and being separated by a gap (24); and a sealant (26) adapted to seal said gap substantially along a perimeter of said gap, said sealant being positioned around said light path (see location of 26); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 16, McGettigan discloses wherein said sealant is positioned along a perimeter of at least one of said first and second optical components (see location of 26).

Regarding claim 23, McGettigan discloses a system (see FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (12) and a second optical component (22) positioned along a light path (41) and being separated by a gap (24); and means for sealing said gap substantially along a perimeter of said gap (26), said means for sealing being positioned around said light path (see location of 26); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 25, McGettigan discloses a system (FIGS. 1-8) for enhancing contrast in a digital projector, comprising: a first optical component (12) and a second optical component (22) positioned along a light path (41) and being separated by a gap (24); and means for restricting airflow through said gap (26), said gap having a substantial vacuum therein (This is a functional limitation because there is no structural limitation that provides the vacuum in the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 27, McGettigan discloses a digital projector (see FIG. 4), comprising: at least two optical components (12, 22) positioned along a light path (41); a gap (24) formed between two of said optical components; and a sealant (26) adapted to seal said gap substantially along a perimeter of said gap, said sealant being positioned around said light path (see location of 26); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no

structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the digital projector).

2. Claims 12, 15, 16, 23, 25, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawano et al. (U.S. Patent No. 6,795,243).

Regarding claim 12, Kawano discloses a system (see FIG. 3) for enhancing contrast in a digital projector, comprising: a first optical component (61) and a second optical component (50) positioned along a light path (see arrows and C2 in FIG. 3) and being separated by a gap (see location of 64); a sealant (64) adapted to seal said gap substantially along a perimeter of said gap, said sealant being positioned around said light path (see position of 64); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 15, Kawano discloses wherein said first optical component is a digital micro-mirror device cover plate (61) and said second optical component is a total internal reflection prism (50).

Regarding claim 16, Kawano discloses wherein said sealant is positioned along a perimeter of at least one of said first and second optical components (see location of 64 relative to 50 and 61).

Regarding claim 23, Kawano discloses a system (see FIG. 3) for enhancing contrast in a digital projector, comprising: a first optical component (61) and a second optical component (50) positioned along a light path (see arrows and C2 in FIG. 3) and

being separated by a gap (see 50 and 61 of FIG. 3); and means for sealing said gap substantially along a perimeter of said gap, said means for sealing being position around said light path (see location of 64); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 25, Kawano discloses a system (see FIG. 3) for enhancing contrast in a digital projector, comprising: a first optical component (61) and a second optical component (50) positioned along a light path (see arrows and C2 in FIG. 3) and being separated by a gap (see location of 64); and means for restricting airflow through said gap (see function of 64), said gap having a substantial vacuum therein (This is a functional limitation because there is no structural limitation that provides the vacuum in the gap. Therefore, it does not further limit the structure of the system).

Regarding claim 27, Kawano discloses a digital projector (see col. 1, lines 17-19), comprising: at least two optical components (50 and 61) positioned along a light path (see arrows and C2 in FIG. 3); a gap (see location of 64) formed between two of said optical components (50 and 61); and a sealant (64) adapted to seal said gap substantially along a perimeter of said gap, said sealant being positioned around said light path (see location of 64); wherein said gap is evacuated to provide substantially a vacuum in said gap (This is a functional limitation because there is no structural limitation that performs the evacuation of the gap. Therefore, it does not further limit the structure of the digital projector).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawano et al. (U.S. Patent No. 6,795,243) in view of Nakabayashi (U.S. Patent Application Publication No. 2002/0024734).

Regarding claim 1, Kawano discloses a method (see function of elements in FIG. 3) for enhancing contrast in a digital projector, comprising: positioning a first optical component (61) and a second optical component (50) along a light path (see arrows and C2 in FIG. 3), said first optical component and said second optical component being separated by a gap (see location of 64); and sealing a perimeter of said gap with a sealant (64), said sealant being positioned around said light path (see location of 64).

Regarding claim 4, Kawano discloses wherein said first optical component is a digital micro-mirror device cover plate (61) and said second optical component is a total internal reflection prism (50).

Regarding claim 5, Kawano discloses "wherein said sealant is positioned substantially along a perimeter of at least one of said first and second optical components (see location of 64 relative to 50 and 61).

Kawano does not appear to disclose the method step of "evacuating said gap to provide substantially a vacuum in said gap".

Nakabayashi teaches evacuating a gap (see gap between the "optical components" in FIGS. 1A-B and 5) to provide substantially a vacuum in said gap (see function of 19 in FIG. 5, and see pg. 3, paragraph [0039] and pg. 4, paragraph [0043]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a method step of evacuating the gap to provide substantially a vacuum in the gap in the "method" of the Kawano reference, as taught by Nakabayashi in order to provide an optical element that can respond to changes of a surrounding environment and is little degraded in its performance even if used for along time (see pg. 1, paragraph [0009]).

Response to Arguments

Applicant's arguments filed September 24, 2004, with respect to Kawano have been fully considered but they are not persuasive.

Applicant argued on pg. 7, under REMARKS, filed September 24, 2004, Kawano in Fig. 3 shows an oil layer 64 positioned across the light path between the cover plate 61 and the prism 50 and not "around said light path".

Examiner disagrees. Applicant is correct in saying the oil layer 64 is positioned across the light path between the cover plate 61 and the prism 50, however applicant is incorrect in saying that the oil layer is not positioned "around said light path". Although oil layer 64 is positioned across the light path, it is also positioned around the light path. FIG. 3 shows that there are portions of 64 that are positioned or lay along the perimeter sides of "first optical element" 61, "second optical element" 50, and the gap. With this

being the case, these portions of 64 are also positioned "around the light path". Therefore, claims 12, 15, 16, 23, 25, and 27 are still anticipated by Kawano.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

JUDY NGUYEN
SUPERVISORY PATENT EXAMINER